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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.        | CONFIRMATION NO.       |
|--|-------------|----------------------|----------------------------|------------------------|
| 10/549,708   | 09/16/2005  | Kentaro Takesada     | 5404/120                   | 6143                   |
| 757. 7590 07/25/2007<br>BRINKS HOFER GILSON & LIONE<br>P.O. BOX 10395<br>CHICAGO, IL 60610 |             |                      | EXAMINER<br>ZIMMER, MARC S |                        |
|  |             |                      | ART UNIT<br>1712           | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>07/25/2007    | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/549,708 | <b>Applicant(s)</b><br>TAKESADA ET AL. |  |
|                              | <b>Examiner</b><br>Marc S. Zimmer    | <b>Art Unit</b><br>1712                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 13, 14, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 3, 6-12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/24/05, 05/01/06, 09/16/05</u> | 6) <input type="checkbox"/> Other: _____  |

### ***Claim Objections***

Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In the Examiner's estimation, "elastomer" and "rubber" are synonymous terms and, thus, claim 3 is not further limiting of claim 1.

In line 7 of claim 10, the word "an" should be removed.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 13, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka et al., JP 55-007814. Matsuoka discloses a composition comprising the materials outlined in the abstract. The copolymer (c) is a block or graft copolymer depending on where the polymerizable groups are situated along the polysiloxane backbone depicted in the upper left quadrant of page 73. This starting material is copolymerized with acrylic monomer(s) adhering to the formula outlined on page 73, lower left quadrant. Concerning claim 13, the abstract states that the acrylic component makes up between 20 and 80% by weight of the copolymer and, hence, the siloxane constitutes between 80 and 20% by weight of the copolymer.

Claims 1-4, 13, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Eichenauer et al., U.S. Patent # 5,272,205. Eichenauer et al. teach a polymer mixture comprising (i) a siloxane rubber particulate to which is grafted one or more vinyl monomers selected from those outlined in the abstract, graft copolymer, and (ii) an acrylic rubber particulate to which are grafted the same monomer compounds that reacted with polysiloxane component. Regarding claim 4, column 3, lines 12-35 describe an acrylic rubber which is comprised of between 0.05 and 10% by weight of a polyfunctional monomer intended for crosslinking. The limitations of claim 13 are satisfied by the teachings at column 2, lines 58-60.

Claims 1-3, 13-14, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohata et al., JP 6-157830. Ohata et al. teach a rubber composition comprising 100 part by weight of a rubber chosen from among the various synthetic and natural rubbers and 0.5 to 50 parts by weight of a polysiloxane graft copolymer (paragraph 15) derived from the graft copolymerization of 95 to 5 wt.% of a mixture of methacrylic- and acrylic monomer onto 5 to 95 wt.% of a polysiloxane bearing copolymerizable groups. The methacryl monomer component represents 70 wt.% or more of the total and acryl monomer 30 wt.% or less. Relevant to the present discussion, it is contemplated in paragraph 6 that an embodiment of the synthetic rubber is acrylic rubber.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al., JP 55-007814. It is contemplated that the acrylic polymer may be derived, in part, from glycidyl methacrylate. Further, Matsuoka et al. mention the employment of a vulcanization agent (to be distinguished from a vulcanization accelerator, which is also mentioned) in the bottom right quadrant of page 74. It is acknowledged that, in both instances, there is no indication as to how much of these materials are being used in terms of their weight contributions. Nevertheless, it is the Examiner's position that this limitation is obvious in view of (i) the fact that skilled artisan is fully cognizant of how the extent of crosslinking impacts polymer properties, and (ii) Applicant's failure to attach any criticality to the stated range and/or to illustrate that there are unexpected results associated with it. "Discovering an optimum value of a result effective variable involves only routine skill in the art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eichenauer et al., U.S. Patent # 5,272,205.

The role of the mixture described in this document is to enhance the properties of thermoplastics. Fillers, lubricants, etc. are given only cursory mention (column 4) due to

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their prevalence in these types of systems and, thus, their suggested quantities are not disclosed. Nevertheless, the Examiner believes that it is easily within the level of one having ordinary skill to optimize these parameters as a matter of routine experimentation.

***Allowable Subject Matter***

Claims 6-12, and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner had attempted to ascertain why it would have been obvious to replace the acrylic rubbers described in the aforementioned references with ones adhering to the structural limitations outlined by claims 6-12 but all references directed to acrylic elastomers having block polymer attributes were unavailable as references because they did not antedate the filing date of the associated PCT application.

As an aside, there are dozens of references that disclose the production of grafted products prepared by reacting intertwined polysiloxane/acrylic composite rubbers with a vinyl monomer such that grafts are formed on both the siloxane- and acrylic polymer components. However, these references did not serve to even render obvious claims other than those already rejected by the prior art of record nor are they as close in spirit to the claimed invention as is Matsuoka et al. hence none of these are being cited herein in the name of brevity.

The ISA cites several references that are purported to anticipate/render obvious at least some claims. The Examiner has reviewed machine generated translations of

some of these and the abstracts of others but it is unclear that any of these are applicable. For instance, JP 2001-114808 appears to teach a polymer mixture comprising a vinyl-functional polysiloxane and an acrylic polymer derived, at least in part, from an unsaturated carboxylic acid. It is not clear that a vinyl monomer is copolymerized with the polysiloxane to form graft copolymer or, in any case, that the grafted chain would necessarily have the constitution required by claims 15 and 16. The Examiner had difficulties procuring a translation of JP 2000-302941 but it would appear at the very least that this reference serves to anticipate no more of the claims than do the references cited herein. JP 6-116498 does not appear to be especially germane. JP 6-49313 teaches a mixture of a grafted acrylic rubber and a composite rubber comprising intertangled polyorganosiloxane and an acrylic polymer to which is grafted a vinyl monomer(s). As with JP 2001-114808, it does not appear that any of the limitations of claims 15-7 are satisfied by this reference. JP 1-103636 teaches crosslinked product formed by reacting an acrylic polymer bearing unsaturated moieties with an organohydrogensiloxane

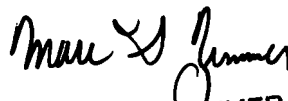
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 23, 2007

  
MARC S. ZIMMER  
PRIMARY EXAMINER